

**2015 Results**  
**Orders, Production and Shipments of Manipulators and Robots by Applications**  
**[JARA Members and Non-members]**

Number of units, ( ) : million yen

CY	2014	2015	Change from 2014
Orders	140,125 (603,709)	155,086 (702,743)	10.7% (16.4%)
Production	136,917 (594,048)	153,785 (680,611)	12.3% (14.6%)

Shipments Applications	2014			2015			Change from 2014			2014 (percentage distribution)			2015 (percentage distribution)		
	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total	Domestic shipments	Exports	Total
<b>Plastic moulding</b>	<b>2,696</b>	<b>4,623</b>	<b>7,319</b>	<b>2,949</b>	<b>4,924</b>	<b>7,873</b>	<b>9.4%</b>	<b>6.5%</b>	<b>7.6%</b>	<b>8.4%</b>	<b>4.4%</b>	<b>5.3%</b>	<b>7.8%</b>	<b>4.2%</b>	<b>5.1%</b>
Arc welding	3,497	17,945	21,442	3,560	16,254	19,814	1.8%	-9.4%	-7.6%	10.9%	17.1%	15.6%	9.4%	13.8%	12.7%
Spot welding	3,471	17,259	20,730	2,819	18,883	21,702	-18.8%	9.4%	4.7%	10.8%	16.4%	15.1%	7.5%	16.0%	14.0%
Laser welding	34	126	160	24	1	25	-29.4%	-99.2%	-84.4%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%
Others	21	19	40	53	10	63	152.4%	-47.4%	57.5%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%
<b>Welding</b> Units	<b>7,023</b>	<b>35,349</b>	<b>42,372</b>	<b>6,456</b>	<b>35,148</b>	<b>41,604</b>	<b>-8.1%</b>	<b>-0.6%</b>	<b>-1.8%</b>	<b>21.9%</b>	<b>33.6%</b>	<b>30.9%</b>	<b>17.1%</b>	<b>29.8%</b>	<b>26.8%</b>
(million yen)	<b>(31,999)</b>	<b>(89,396)</b>	<b>(121,395)</b>	<b>(33,402)</b>	<b>(93,643)</b>	<b>(127,045)</b>	<b>(4.4%)</b>	<b>(4.8%)</b>	<b>(4.7%)</b>	<b>(19.2%)</b>	<b>(21.1%)</b>	<b>(20.6%)</b>	<b>(16.6%)</b>	<b>(19.4%)</b>	<b>(18.6%)</b>
<b>Painting</b>	<b>463</b>	<b>1,258</b>	<b>1,721</b>	<b>606</b>	<b>1,650</b>	<b>2,256</b>	<b>30.9%</b>	<b>31.2%</b>	<b>31.1%</b>	<b>1.4%</b>	<b>1.2%</b>	<b>1.3%</b>	<b>1.6%</b>	<b>1.4%</b>	<b>1.5%</b>
Loading/unloading	1,855	4,297	6,152	2,268	5,709	7,977	22.3%	32.9%	29.7%	5.8%	4.1%	4.5%	6.0%	4.8%	5.1%
Mechanical cutting	8	29	37	8	5	13		-82.8%	-64.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grinding/deburring	157	41	198	214	111	325	36.3%	170.7%	64.1%	0.5%	0.0%	0.1%	0.6%	0.1%	0.2%
Others	52	21	73	70	4	74	34.6%	-81.0%	1.4%	0.2%	0.0%	0.1%	0.2%	0.0%	0.0%
<b>Machining</b> Units	<b>2,072</b>	<b>4,388</b>	<b>6,460</b>	<b>2,560</b>	<b>5,829</b>	<b>8,389</b>	<b>23.6%</b>	<b>32.8%</b>	<b>29.9%</b>	<b>6.5%</b>	<b>4.2%</b>	<b>4.7%</b>	<b>6.8%</b>	<b>4.9%</b>	<b>5.4%</b>
(million yen)	<b>(9,066)</b>	<b>(10,120)</b>	<b>(19,185)</b>	<b>(9,983)</b>	<b>(12,649)</b>	<b>(22,632)</b>	<b>(10.1%)</b>	<b>(25.0%)</b>	<b>(18.0%)</b>	<b>(5.4%)</b>	<b>(2.4%)</b>	<b>(3.3%)</b>	<b>(5.0%)</b>	<b>(2.6%)</b>	<b>(3.3%)</b>
<b>Surface Mount Technology</b>	<b>1,436</b>	<b>8,929</b>	<b>10,365</b>	<b>1,361</b>	<b>8,168</b>	<b>9,529</b>	<b>-5.2%</b>	<b>-8.5%</b>	<b>-8.1%</b>	<b>4.5%</b>	<b>8.5%</b>	<b>7.5%</b>	<b>3.6%</b>	<b>6.9%</b>	<b>6.1%</b>
General Assembly	5,634	15,729	21,363	7,244	15,265	22,509	28.6%	-2.9%	5.4%	17.5%	14.9%	15.6%	19.2%	13.0%	14.5%
Other Assembly	1,196	3,433	4,629	1,600	5,440	7,040	33.8%	58.5%	52.1%	3.7%	3.3%	3.4%	4.2%	4.6%	4.5%
Bonding	820	3,250	4,070	922	4,800	5,722	12.4%	47.7%	40.6%	2.6%	3.1%	3.0%	2.4%	4.1%	3.7%
Soldering	1		1	178	181	359	17700.0%		35800.0%	0.0%		0.0%	0.5%	0.2%	0.2%
Sealing/glueing	37	135	172	40	151	191	8.1%	11.9%	11.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Screwing	5		5	16	6	22	220.0%		340.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Others	333	48	381	444	302	746	33.3%	529.2%	95.8%	1.0%	0.0%	0.3%	1.2%	0.3%	0.5%
<b>Assembly</b> Units	<b>6,830</b>	<b>19,162</b>	<b>25,992</b>	<b>8,844</b>	<b>20,705</b>	<b>29,549</b>	<b>29.5%</b>	<b>8.1%</b>	<b>13.7%</b>	<b>21.3%</b>	<b>18.2%</b>	<b>18.9%</b>	<b>23.5%</b>	<b>17.6%</b>	<b>19.0%</b>
(million yen)	<b>(22,797)</b>	<b>(48,824)</b>	<b>(71,621)</b>	<b>(30,810)</b>	<b>(64,274)</b>	<b>(95,085)</b>	<b>(35.2%)</b>	<b>(31.6%)</b>	<b>(32.8%)</b>	<b>(13.7%)</b>	<b>(11.5%)</b>	<b>(12.1%)</b>	<b>(15.3%)</b>	<b>(13.3%)</b>	<b>(13.9%)</b>
<b>Palletizing/depalletizing</b>	<b>1,426</b>	<b>1,833</b>	<b>3,259</b>	<b>1,522</b>	<b>2,591</b>	<b>4,113</b>	<b>6.7%</b>	<b>41.4%</b>	<b>26.2%</b>	<b>4.4%</b>	<b>1.7%</b>	<b>2.4%</b>	<b>4.0%</b>	<b>2.2%</b>	<b>2.6%</b>
<b>Material handling</b>	<b>5,058</b>	<b>20,688</b>	<b>25,746</b>	<b>6,133</b>	<b>24,060</b>	<b>30,193</b>	<b>21.3%</b>	<b>16.3%</b>	<b>17.3%</b>	<b>15.7%</b>	<b>19.7%</b>	<b>18.7%</b>	<b>16.3%</b>	<b>20.4%</b>	<b>19.4%</b>
FPD	386	2,006	2,392	744	3,112	3,856	92.7%	55.1%	61.2%	1.2%	1.9%	1.7%	2.0%	2.6%	2.5%
Semiconductor	3,075	3,999	7,074	4,325	8,002	12,327	40.7%	100.1%	74.3%	9.6%	3.8%	5.2%	11.5%	6.8%	7.9%
Others	1		1	4	81	85	300.0%		8400.0%	0.0%		0.0%	0.0%	0.1%	0.1%
<b>Cleanroom</b> Units	<b>3,462</b>	<b>6,005</b>	<b>9,467</b>	<b>5,073</b>	<b>11,195</b>	<b>16,268</b>	<b>46.5%</b>	<b>86.4%</b>	<b>71.8%</b>	<b>10.8%</b>	<b>5.7%</b>	<b>6.9%</b>	<b>13.5%</b>	<b>9.5%</b>	<b>10.5%</b>
(million yen)	<b>(21,707)</b>	<b>(39,253)</b>	<b>(60,961)</b>	<b>(31,745)</b>	<b>(69,175)</b>	<b>(100,920)</b>	<b>(46.2%)</b>	<b>(76.2%)</b>	<b>(65.5%)</b>	<b>(13.0%)</b>	<b>(9.3%)</b>	<b>(10.3%)</b>	<b>(15.8%)</b>	<b>(14.3%)</b>	<b>(14.8%)</b>
<b>Other applications</b>	<b>1,653</b>	<b>2,980</b>	<b>4,633</b>	<b>2,199</b>	<b>3,548</b>	<b>5,747</b>	<b>33.0%</b>	<b>19.1%</b>	<b>24.0%</b>	<b>5.1%</b>	<b>2.8%</b>	<b>3.4%</b>	<b>5.8%</b>	<b>3.0%</b>	<b>3.7%</b>
<b>Total</b> Units	<b>32,119</b>	<b>105,215</b>	<b>137,334</b>	<b>37,703</b>	<b>117,818</b>	<b>155,521</b>	<b>17.4%</b>	<b>12.0%</b>	<b>13.2%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
(million yen)	<b>(166,739)</b>	<b>(423,341)</b>	<b>(590,079)</b>	<b>(201,001)</b>	<b>(482,413)</b>	<b>(683,413)</b>	<b>(20.5%)</b>	<b>(14.0%)</b>	<b>(15.8%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>

Note)

Data includes dedicated type (Surface Mount Technology / Bonding).

Data is collected in unit of 10,000 yen. However, the results are shown in unit of million yen by rounding the figures of 100,000 yen.

**2015 Results**  
**Shipments of Manipulators and Robots by Industries**  
**[JARA Members and Non-members]**

Number of units, ( ) : million yen

Industries	2014	2015	Change from 2014	Percentage distribution	
				2014	2015
<b>Metal products</b>	<b>1,459</b>	<b>1,972</b>	<b>35.2%</b>	<b>4.5%</b>	<b>5.2%</b>
Construction and mining machinery	140	124	-11.4%	0.4%	0.3%
Metalworking machinery	704	577	-18.0%	2.2%	1.5%
Other machinery and equipment	707	2,174	207.5%	2.2%	5.8%
<b>Machinery and equipment</b> Units	<b>1,551</b>	<b>2,875</b>	<b>85.4%</b>	<b>4.8%</b>	<b>7.6%</b>
(million yen)	<b>(5,230)</b>	<b>(15,377)</b>	<b>(194.0%)</b>	<b>(3.1%)</b>	<b>(7.7%)</b>
Electronic computers	364	693	90.4%	1.1%	1.8%
Consumer electrical machinery	601	1,675	178.7%	1.9%	4.4%
Industrial electrical machinery	602	862	43.2%	1.9%	2.3%
Communication equipment	1,323	1,128	-14.7%	4.1%	3.0%
Video and audio equipment	296	417	40.9%	0.9%	1.1%
Electronic components/devices/circuits	4,411	5,028	14.0%	13.7%	13.3%
Other electrical machinery	2,572	3,781	47.0%	8.0%	10.0%
<b>Electrical machinery</b> Units	<b>10,169</b>	<b>13,584</b>	<b>33.6%</b>	<b>31.7%</b>	<b>36.0%</b>
(million yen)	<b>(66,954)</b>	<b>(80,365)</b>	<b>(20.0%)</b>	<b>(40.2%)</b>	<b>(40.0%)</b>
<b>Precision instruments</b>	<b>361</b>	<b>488</b>	<b>35.2%</b>	<b>1.1%</b>	<b>1.3%</b>
Motor vehicles	3,640	3,812	4.7%	11.3%	10.1%
Auto parts	7,026	7,620	8.5%	21.9%	20.2%
<b>Motor vehicles and auto parts</b> Units	<b>10,666</b>	<b>11,432</b>	<b>7.2%</b>	<b>33.2%</b>	<b>30.3%</b>
(million yen)	<b>(49,105)</b>	<b>(53,464)</b>	<b>(8.9%)</b>	<b>(29.5%)</b>	<b>(26.6%)</b>
<b>Other transport equipment</b>	<b>218</b>	<b>315</b>	<b>44.5%</b>	<b>0.7%</b>	<b>0.8%</b>
<b>Food products, beverages, and tobacco products</b>	<b>762</b>	<b>663</b>	<b>-13.0%</b>	<b>2.4%</b>	<b>1.8%</b>
<b>Chemical products</b>	<b>400</b>	<b>277</b>	<b>-30.8%</b>	<b>1.2%</b>	<b>0.7%</b>
<b>Plastic products</b>	<b>2,786</b>	<b>1,147</b>	<b>-58.8%</b>	<b>8.7%</b>	<b>3.0%</b>
<b>Other industries</b>	<b>3,747</b>	<b>4,795</b>	<b>28.0%</b>	<b>11.7%</b>	<b>12.7%</b>
<b>Non-manufacturing industry</b>		<b>155</b>			<b>0.4%</b>
<b>Total domestic shipments</b> Units	<b>32,119</b>	<b>37,703</b>	<b>17.4%</b>	<b>100.0%</b>	<b>100.0%</b>
(million yen)	<b>(166,739)</b>	<b>(201,001)</b>	<b>(20.5%)</b>	<b>23.4%</b>	<b>24.2%</b>
				<b>(100.0%)</b>	<b>(100.0%)</b>
				<b>(28.3%)</b>	<b>(29.4%)</b>
<b>Export</b> Units	<b>105,215</b>	<b>117,818</b>	<b>12.0%</b>	<b>76.6%</b>	<b>75.8%</b>
(million yen)	<b>(423,341)</b>	<b>(482,413)</b>	<b>(14.0%)</b>	<b>(71.7%)</b>	<b>(70.6%)</b>
<b>Grand total</b> Units	<b>137,334</b>	<b>155,521</b>	<b>13.2%</b>	<b>100.0%</b>	<b>100.0%</b>
(million yen)	<b>(590,079)</b>	<b>(683,413)</b>	<b>(15.8%)</b>	<b>(100.0%)</b>	<b>(100.0%)</b>

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